



Seminar and Roundtable on Coalbed Methane Development and Potential



UKRAINE

September 10, 1998

Country Fact Sheet

Current CBM Activities

- CBM Energy
- Global Environment Facility CBM Recovery Project
- ICMG
- Eurodongas
- CBM in Lviv-Volyn Coal Basin

Key Factors in Energy Economy

- 90% of oil and 80% of natural gas is imported, mostly from Russia.
- USG and G7 are supporting energy solutions that will allow the shut down of Chernobyl in 2000.
- Ukraine is one of the most inefficient users of energy. Collections for gas and electric power are poor, and much of that is in barter rather than cash.

Potential Role of CBM in Energy Economy

- Significant potential to mitigate the imported gas
- Primary energy in power generation

CBM Potential

- > 750 bcm
- Substantial quantities at unknown costs

Existing Policies Affecting CBM Development

None developed, but the government is interested

Overseeing or Permitting Government Agencies

- State Committee on Geology (for licensing)
- State Committee on Coal
- State Committee on Oil and Gas
- Local Miner's Associations
- Ministry of Environment
- Academy of Science



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Potential Barriers to CBM Development

- No experience in licensing and technology
- Inadequate framework for private sector development
- Legislative and legal framework for investment is not complete
- High taxes
- No cash payments for energy supplied

Donors/ Companies/ Investors Active in CBM

U.S. Environmental Protection Agency, U.S. Agency for International Development, GEF, Vuglegas, ICBMCG



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CBM Energy

Contact Information

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Status

Negotiating for leases

Location

Donetsk Coal Basin

Technical Summary

A three-stage project to gasify and produce CBM is being planned:

- *Phase 1: Evaluation and pilot project (5 years)*

This stage is divided into three parts:

- 1) The existing geological and other data for the five license areas will be analyzed. Plans include drilling four exploratory wells to test the productivity of the sandstones and coals.
- 2) The first part will be expanded. CBM estimates partners will drill 10 vertical frac wells during the 2nd year and 20 during the 3rd year. These wells will be connected to a local gas gathering system (under construction) and to some local customers.
- 3) The partners plan to drill 40 vertical frac walls during Year 4 and 60 during Year 5 of the project.

- *Phase 2: Development (5 years)*

The partners will begin development drilling on selected



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commercially viable areas. Plans call for drilling about 60 vertical frac wells/year. In addition, about 10 gob wells/year will be drilled, and all wells will be prepared for production. The gas gathering system will be completed during this stage and connected to primary consumers and the main transmission system. At this point, all commercial production will be available for sale.

- *Phase 3:* Commercial degasification and production (at least 20 years).

The partners will continue to drill about 60 vertical frac wells/year. Ten gob wells/year will be drilled for 10 years. The number of gob wells will then decrease to 5/year for the next 5 years, with drilling to halt thereafter. Initial production of 290-483 MMcfd is targeted.

Estimated Capital and O&M Costs

CBM Energy plans to invest US\$25-30 million during Stage 1. Total investment over the life of the project will exceed US\$350 million.

Proponents/ Sponsors of the Project

- CBM Energy
- DonUgol
- MakeevUgol



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GEF Coalbed Methane Recovery Project

Contact Information

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Ministry of Coal Industry, Kiev
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Status

Under preparation

Location

Gorskaya Mine, Lugansk Oblast

Technical Summary

Demonstration project consisting of drilling wells from the surface, gas production tests and, if warranted, connection to gas pipeline for high-quality gas and on-site electricity for low-quality gas.

**Estimated Capital
and O&M Costs**

- Total capital costs: \$5.5 M
- Operating costs: \$0.5 M/a

Sources of Revenue

- Pipeline gas
- Electricity

**Proponents/
Sponsors of the
Project**

Ministry of Coal Industry / Alternative Fuels Center



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ICMG

Contact Information

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Status

Negotiating for a license



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Eurodongas

Location

Donetsk Coal Basin

Technical Summary

- Drill three wells to ~1000m to find information about the potential recoverable reserves
- Ministry of Coal estimates the geological reserves at this site at approximately 200 billion cubic meters

**Estimated Capital
and O&M Costs**

Eurogas will fund all capital expenditures and receive a 70% revenue interest until its capital costs are repaid, after which interest will revert to 50%

Sources of Revenue

**Proponents/
Sponsors of the
Project**

Eurogas
Makyivs'ke Girs'ke Tovarystvo



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CBM in Lviv-Volyn Coal Basin

Status

Start date: August 1998

Location

Lviv-Volyn Coal Basin

Technical Summary

- Drill three CBM gas wells to depths of 400-500m
- Zahidukrgeologia estimates the geological reserves at this site at approximately 10 billion cubic meters

**Proponents/
Sponsors of the
Project**

- Eurodongas
- Zahidukrgeologia